

Background and Aims: Anxiety has been expressed in regard to the danger of pregnant women eating seafood because of a reported danger to the fetal brain from mercury contained in seafood. However the studies that have shown this have been of populations where the seafood mainly consumed is high in the food chain, and includes pilot whale and tiger shark. This study aimed to assess the contribution of different components of the diet to the UK pregnant woman's blood mercury level in an area where the general consumption of fish is lower, and the species consumed are more often at the middle and lower ends of the food chain.

Methods: The study used information from 4484 pregnancies in the Avon Longitudinal Study of Parents and Children (ALSPAC), using blood collected in acid washed vacutainers when the women first reported for antenatal care. Information on the diet was collected from the women themselves using a detailed food frequency questionnaire. Statistical analysis used forward and backward stepwise regression with total mercury level as the outcome.

Results: The median of the total blood mercury distribution was $1.86\mu\text{g/L}$, substantially higher than found in the pregnant women in the NHANES study in the US [$0.89\mu\text{g/L}$]. However the level of the 95th centile was significantly lower in ALSPAC than that of the US study (4.02 v. 5.98).

Altogether in ALSPAC the maternal diet was responsible for only 16.53% of the variation in total blood mercury. This included 6.95% of the variation due to consumption of seafood, i.e. 42% of the dietary variation. Other features of the UK diet positively associated with increased blood mercury levels included wine, herbal drinks and the use of "health foods".

Conclusions: Consumption of seafood in the UK is responsible for only a small proportion of the variance in blood mercury.